statures probably prevail. For this reason his average statures are all too high, and the distributions of statures appear more assymetrical than they would be if the total population were considered.

The remaining portion of the volume is taken up with a detailed discussion of the geographical distribution of the various anthropometric types. It is not possible to enter into this interesting subject at this place, and it may suffice to call attention to the important results that the author has reached. Historical events relating to the settling of certain portions of Italy are reflected with remarkable accuracy in the charts showing the distribution of types. I mention, for instance, the occurence of a tall dolichocephalic type near Lucca, and the peculiarities of the type inhabiting Carloforte as compared to the rest of the inhabitants of Sardinia.

This exhaustive work will always remain the basis of all studies on the anthropometry of the people of the Italian Peninsula.

FRANZ BOAS.

Electric Lighting, a Practical Exposition of the Art for the Use of Engineers, Students and Others interested in the Installation or Operation of Electrical Plants. Vol. I. *The Generating Plant.* By FRANCIS B. CROCKER, E.M., Ph. D., Professor of Electrical Engineering in Columbia University. 8vo. VIII. 444 pp. New York, D. Van Nostrand Company.

In the preface the author states his belief—and he is undoubtedly correct—"that electric lighting has reached a sufficiently perfected and established state to allow of its being treated in a fairly satisfactory and permanent manner."

According to the plan adopted by the author, the subjects treated in this volume are taken up in the following order: Two chapters are devoted to the introduction and historical matter; the third discusses units and measures, and the fourth treats of the classification and selection of electric lighting systems. The clear and candid statement of reasons which should influence the selection of a system makes the fourth chapter of great practical value.

It is evident, however, that Prof. Crocker advocates the use of the direct current where many engineers would prefer to use an alternating system; and while he very properly quotes the value of human life as one of the factors which should influence a decision, he seems to neglect the fact that good work and materials will render any current in commercial use practically safe, while want of care in wiring and poor insulation will, through the fire risks involved, make either system an indirect menace to human life, far more serious in its nature than the direct danger threatened by the employment of high voltage alternating currents.

Two chapters follow which consider location and buildings, and then the author proceeds to the consideration of sources of energy, prime motors, and the mechanical connections between engines and dynamos. The chapters devoted to these subjects fill two hundred pages, or nearly one half of the volume.

After these come two chapters in which the design and construction of electrical machines is briefly treated. There is no lumber in this part of the work, and the reader will miss the time-honored descriptions and illustrations which have been so prominent in electrical textbooks for the last fifteen years.

The next chapter is one of the most valuable in the book; it is largely taken from a work by Prof. Crocker and Dr. S. S. Wheeler, and contains more direct and practical instruction as to the care and use of electrical machinery than can be found in the same number of pages elsewhere.

The author knows his subject and knows how to tell what he knows, a rare combination one is sometimes tempted to believe.

The remainder of the work, about sixty pages, is devoted to accumulators, switch-boards and apparatus, and electrical measuring instruments.

The distribution and utilization of electricity for the purpose of illumination are subjects reserved for a second volume.

A very valuable feature of the book is found in the abundant reference made to books and papers treating single topics more fully than the limits of this work will allow.

It is practically impossible to give in a treatise of moderate size more than a small part of the matter absolutely necessary for the use of

the student when the subject treated is a branch of pure or applied science. And the author who neglects to avail himself of this simple method of enormously increasing the value of his book does grievous injustice to his subject, his readers and himself. No engineer can be a man of one book. The profession needs a broad and deep foundation. Outline treatises, schedules, abstracts from lecture courses and pocket manuals are valuable in their way, but they should be used only as guides to a systematic course of reading or as memoranda in which are collected the results of previous study.

No one probably knows the truth of these statements better than Prof. Crocker, and without doubt it is his recognition of the impossibility of making a complete presentation of his subject which has inclined him to supplement his text with so many valuable references. It is in this connection that the chief criticism upon this work is to be made. The sub-title, 'A Practical Exposition of the Art for the Use of Engineers, Students and Others interested in the Installation or Operation of Electrical Plants,' might fairly lead one to look for an encyclopedia or library even. The book is rather overloaded by its title.

The author has made excellent choice of his matter. The book is remarkably free from 'padding' and as we should expect in a work by Prof. Crocker, the form in which the topics are presented is direct and clear.

Like Oliver Twist, however, the reader is often inclined to ask for more of the same sort.

The student or engineer will find it helpful, if not complete. And we venture the assertion that the general reader and the "Others interested in the Installation and Operation of Electrical Plants' will find this on the whole the most satisfactory work published.

A. S. Kimball.

Worcester Polytechnic Institute.

Our Native Birds of Song and Beauty. By H. Nehrling. 4°. George Brumder, Milwaukee. Part XIV. June, 1896.

Again it is our pleasant duty to announce the appearance of another part of Nehrling's meritorious work on North American Birds.

It opens with an excellent colored plate of the Dickcissel by R. Ridgway. The male is singing in a field of red clover, with the mother on her nest below. Another plate by Goering shows the meadow lark and the bobolink, and also the yellow-headed and red-winged blackbirds. The text treats of these species and also of several of the true orioles—Audubon's, Scott's, the hooded, orchard and Baltimore. The biographies, as in previous parts, take one into the woods and fields and marshes, where the birds live, and introduce him to the surroundings before bringing in the subject of the sketch. The matter on geographic distribution has received a little more attention than usual, and considerable information is given on food habits.

The announcement is made that two more parts will complete the present (2d) volume. This is good news, and we heartily commend the book to those who wish to procure, at a reasonable price, a reliable work, with colored plates, on the haunts and habits of North American birds. C. H. M.

Die Haustiere und ihre Bezeihungen zur Wirtschaft des Menschen. Eine geographische studie, von Eduard Hahn. Leipzig, Duncker & Humblot. 1896. 8°, pp. 581.

In this work the author has brought together in convenient form a large mass of facts concerning domesticated animals. He begins with the dog and ends with fish. Besides the ordinary domesticated mammals, he includes the yak, buffalo, deer, camel, lama, rabbit, cavy, and ferret. The number of birds treated is also considerable.

In dealing with the origin of the various breeds, the author usually quotes eminent authorities, rarely advancing views of his own. Footnote references are given in profusion, so that those interested in following up the subject shall not want for material.

The systematic part of the work, in which each animal is discussed at length, is followed by a geographical study, in which the several countries are discussed with respect to their domesticated animals. C. H. M.

The Gypsy Moth. A Report of the Work of Destroying the Insect in the Commonwealth